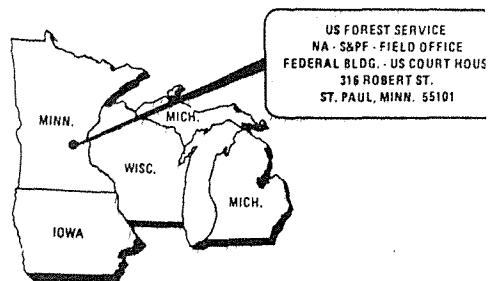


US DEPARTMENT OF AGRICULTURE  
FOREST SERVICE



*Northeastern Area*  
**State & Private Forestry**  
**DIVISION OF FOREST PEST CONTROL**



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AERIAL SURVEY OF JACK PINE BUDWORM DEFOLIATION ON  
THE HIAWATHA NATIONAL FOREST

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INTRODUCTION

Jack-pine budworm, Choristoneura pinus pinus Freeman, defoliation has occurred in the Upper Peninsula, Michigan, during most of the last decade. The last outbreak on the Hiawatha National Forest started in 1965 and peaked in 1967. Defoliation has been on the decline since then.

METHODS

An aerial survey was flown July 28, 1970, in the Forest Service Aero-commander. Flights were in a north-south direction; in parallel lines 4 miles apart; 1,000 feet above the ground; at 120 m.p.h. Defoliation was classed as follows:

None - No visible defoliation

Light - Browning barely visible

Moderate - Browning obvious, but green foliage predominates

RESULTS

East Unit - No visible defoliation was observed from the air.

West Unit - Light defoliation was observed in two areas. The red pine in T<sup>4</sup>1N, R17W Sec. 35 & 36 south of U.S. 2 that is mixed with jack-pine had moderate defoliation. Jack-pine in T39, 40 and 41N, R21 and 22W. had light defoliation.

